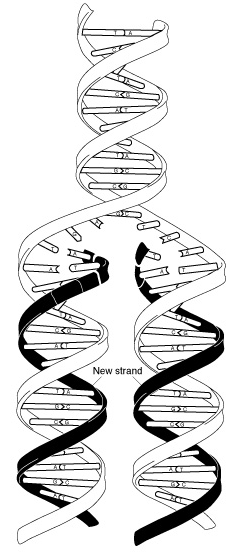
Names:\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_

**DNA Replication Activity**

**Set-Up:** You will be in groups of three to four people . Each group will have a poster board showing the parent double helix unwinding and a bag full of nucleotides/enzymes.

**Directions and Questions:**

1. Place the poster board on the table.
2. Inside the bag, there will be four types of nucleotides (20 each)

Adenine = Pink

Thymine = Green

Cytosine = Yellow

Guanine = Orange

There will also be three enzymes

Helicase = Blue

DNA Polymerase = Purple

Ligase = Red

1. Create the **Leading Strand.** Remember, the leading strand gets created INTO the replication fork. Replication always starts at the 3’ end of the parent strand.

Use the nitrogenous bases (A,T,C, and G) in your bag to make a strand complementary to the parent strand. Call Mrs. Krouse over, and show her how you made the strand, and explain/show how **DNA polymerase** helps with this process.

Teacher Initials: \_\_\_\_\_\_

1. Create the **Lagging Strand.** Remember, the lagging strand gets created OUT OF the replication fork. Again, replication always starts at the 3’ end of the parent strand.

Call Mrs. Krouse over, and show her how you made the lagging strand. Show her how the lagging strand is formed in fragments, and how **Ligase** helps with this process.

Teacher Initials: \_\_\_\_\_\_

1. Place **helicase** over the replication fork. How does helicase help with DNA replication?

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1. What enzyme has Mrs. Krouse left out of the bag? What is this enzyme’s job in DNA replication? (You may want to look at your notes to figure this one out!)

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1. How do **DNA polymerase** and **ligase** work together to repair errors in DNA replication? (Example Error: Pairing an adenine on the parent strand with a cytosine on the new strand)

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1. After DNA replication, how many DNA double helixes do we have? Why?

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1. Along a **eukaryotic chromosome**, is there ONE **origin of replication** or MANY? Explain your answer.

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